

How to Make Your Home More Energy Efficient

September 15, 2011

Hayward, CA

Reduce energy use. Save money. Create jobs.



Introduction

Energy Upgrade California™ is a statewide program providing significant incentives to help homeowners make their homes more comfortable, healthy, and energy efficient.

www.EnergyUpgradeCA.org



Reduce energy use. Save money. Create jobs.



The Program Website

Energy Upgrade California's one-stop-shop

Visit www.EnergyUpgradeCA.org to:

- Plan an energy upgrade project tailored to your home
- Find a list of Participating Contractors
- Find out which rebates and incentives are available in your local area
- Watch a video about the program
- Sign up for email updates



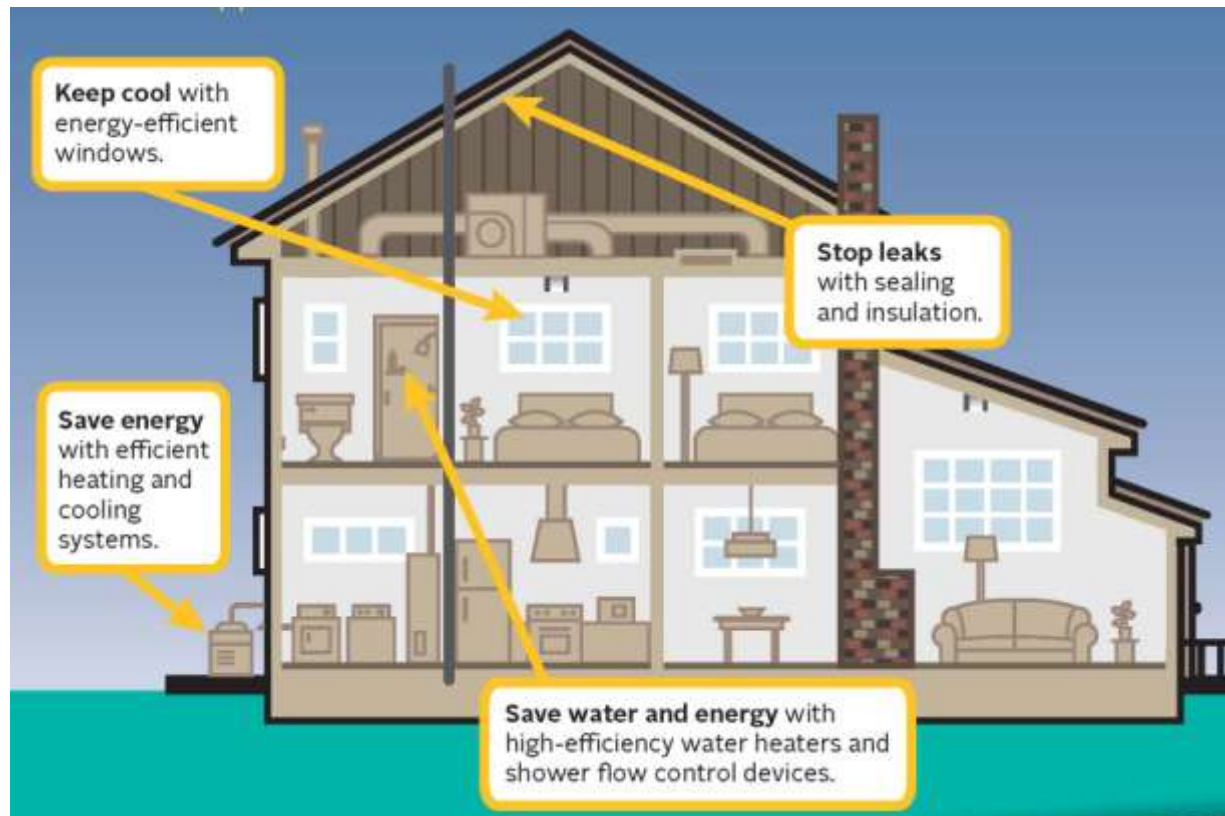
Funding

Funding sources

- State Energy Program/American Recovery and Reinvestment Act (ARRA) stimulus funds
- Investor Owned Utility Whole House Retrofit Program
- California Energy Commission-administered Energy Efficiency and Conservation Block Grants
- Better Buildings Program
- Employment Development Department Workforce Investment Act

Whole House Approach

Your house is a system with complex interactions



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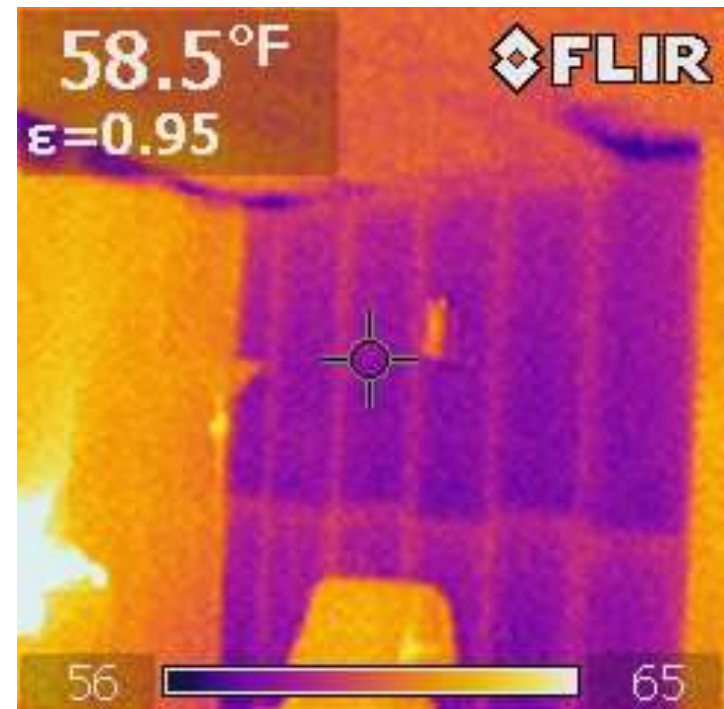


Measured Performance



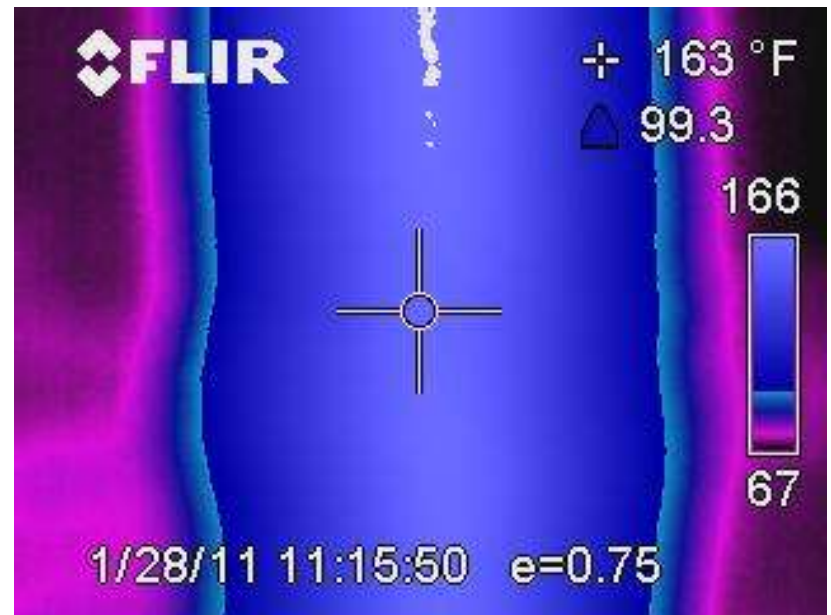
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Thermal Imaging



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Simple Fixes



Uninsulated Attic



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Moist, Uninsulated Crawlspace



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Duct Problems



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Air Sealing



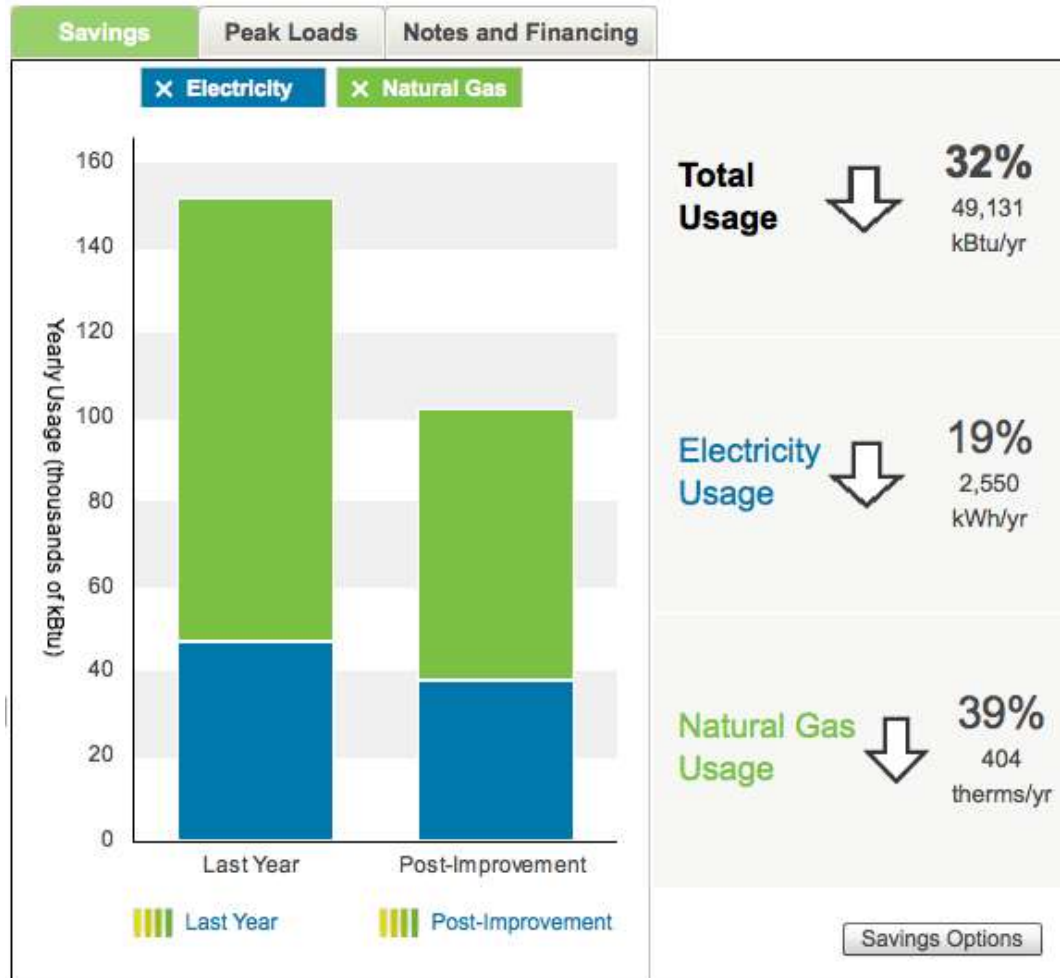
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Attic Insulation



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Software Modeling



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Asbestos



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Combustion Safety



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Statewide Utility Incentives

Basic Upgrade Package		Advanced Upgrade Package	
Required Measures	Incentive	Required Basic Package Measures + Custom Measures	Incentive
<ul style="list-style-type: none">• Air sealing• Attic insulation• Duct sealing• Hot water pipe insulation• Low-flow showerhead with thermostatic control• Smoke alarms and carbon monoxide detectors• Combustion safety testing	Up to \$1,000	<p>Choose from elements such as:</p> <ul style="list-style-type: none">• High-efficiency furnaces• Energy-efficient cooling systems• Energy-efficient water heaters• Wall insulation• Energy-efficient pool pumps• Dual pane energy-efficient windows• Cool roofs	\$1,500 to over \$4,000
Approximately 10% energy savings		Required 15%-40% energy savings	

Additional Incentives

Extra incentives are available by region, including:

- Additional rebate money from cities and counties
- Co-marketing and preferred pricing programs for contractors

Financing

CHF Energy Upgrade Program

Low-interest loans and grants

- 3% fixed interest rate, 15-year fully amortizing
- Grant of 15% of project cost, up to \$1,250
- www.chfloan.org

Key Message

- **Home performance contractors and energy experts are taking a new approach to home improvement that considers the whole house as a system and uses before and after testing to achieve measurable results.**

Wins

- Make your home more comfortable
- Improve your indoor air quality
- Make your home more energy and water efficient
- Potentially lower your utility bills
- Potentially increase your home value



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Wins

- Achieve greater energy independence
- Reduce greenhouse gas emissions to mitigate climate destabilization (help the environment)
- Support the local economy
- Create jobs



How It Works



Go to
EnergyUpgradeCA.org
to find an expert



Plan your project



Complete your
upgrade



Get your rebate!

Reduce energy use. Save money. Create jobs.

Participating Contractors

- Trained for Energy Upgrade California
- Valid CA contractor's license, bonding, certifications, training
- Experts in energy efficiency
- Certified by Building Performance Institute (BPI)



Thank You

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Incentives from the City of Hayward

PG&E Advanced Upgrade Package* with City of Hayward Rebates

Efficiency Improvement	PG&E Rebate	City of Hayward Rebate	City of Hayward Assessment Rebate**	Total Possible Rebate
10%		\$1,000	\$250	\$1,250
15%	\$1,500	\$1,500	\$250	\$3,250
20%	\$2,000	\$2,000	\$250	\$4,250
25%	\$2,500	\$2,000	\$250	\$4,750
30%	\$3,000	\$2,000	\$250	\$5,250
35%	\$3,500	\$2,000	\$250	\$5,750
40%	\$4,000	\$2,000	\$250	\$6,250

* This description is provided for example only. Rebates may change. See your contractor for details.

** A Home Energy Assessment is required for the Advanced Upgrade Package. An additional City of Hayward rebate of \$250 is available if a Home Energy Assessment is completed and if approved upgrade work is completed.



Incentives from the City of Hayward

PG&E Basic Upgrade Package with City of Hayward Rebates

Measures	PG&E Rebate	City of Hayward Rebate	City of Hayward Assessment Rebate*	Total Possible Rebate
The PG&E Basic Upgrade Package requires a specific list of measures.	\$1,000	\$750	\$250	\$2,000

* While the Home Energy Assessment is optional for the PG&E Basic Upgrade Package, an additional City of Hayward rebate of \$250 is available if a Home Energy Assessment is completed and if approved upgrade work is completed.



City of Hayward Alternative Upgrade Package

For homes that cannot meet the PG&E Basic Upgrade requirements.

Measures	City of Hayward Rebate	City of Hayward Assessment Rebate*	Total Possible Rebate
•Mandatory Measures <ul style="list-style-type: none">• Air Sealing• Low-Flow Showerheads• Water pipe insulation• Combustion safety test• Carbon monoxide and smoke alarms	\$750	\$250	\$1,000
•Additional Measures <ul style="list-style-type: none">• Attic Insulation (only required if the home has an attic)• Duct Sealing (only required if the home has ducts)			

* While the Home Energy Assessment is optional for the Hayward Alternative Upgrade Package, an additional City of Hayward rebate of \$250 is available if a Home Energy Assessment is completed and if approved upgrade work is completed.



Hayward Homeowners!

**Enter Today to
Win Free
Energy Efficiency
Improvements
for Your Home!**



Plus! Every homeowner who
enters receives **50% Off** an
energy efficiency assessment

*Contest
Drawing Will
Occur at
Beginning of
October 11
City Council
meeting at
City Hall
Council
Chambers*



Introduction to Home Performance

Presented by: Scott O'Hara

Eco Performance Builders

Home Energy, Comfort, Air Quality



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Common problems with homes

- High energy bills from heating, cooling and base load.
- Uncomfortable homes in the winter and summer. Hot and cold rooms
- In air quality. How safe is the air we breathe?
- Moisture issues in the home



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Opportunities for improvement

- Duct Leakage and Insulation
- Air Leakage
- Insulation Levels
- Equipment Upgrades and Engineering
- Refrigerant Charge
- Room Air Delivery
- Building Pressures



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Four Step Process

1. Utilize information from home assessment and customer interview to diagnose the problems with the home.
2. Present homeowner with report along with recommendations and options for retrofit.
3. Complete agreed upon retrofit work.
4. Test out to confirm work has been completed to specifications.



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Jeeva Residence

Typical Modern Tract House Built In 1996



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Typical Duct System Problems

35% Leakage and Improper Installation



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Poorly Installed Insulation

No Insulation in Areas



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Furnace in Attic

Dangerous situation with unsealed doors protecting occupants of bedroom



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New 96% Efficient Water Heater



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Combined Hydronic Air Handler



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Air Sealing



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Duct Sealing



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Insulation and Equipment Preparation



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Attic Insulation



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Key Contact Information

Eco Performance Builders

www.epbuilders.com

Concord, CA

925-363-4498

www.EnergyUpgradeCA.org



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The Home Energy Assessment

- Blower door for infiltration
- Infrared camera
- Duct blaster
- Flow hood for air flow at registers.
- Measure ventilation in bathrooms, kitchen, etc.
- CAZ safety test
- Visual analysis of insulation levels and hazards

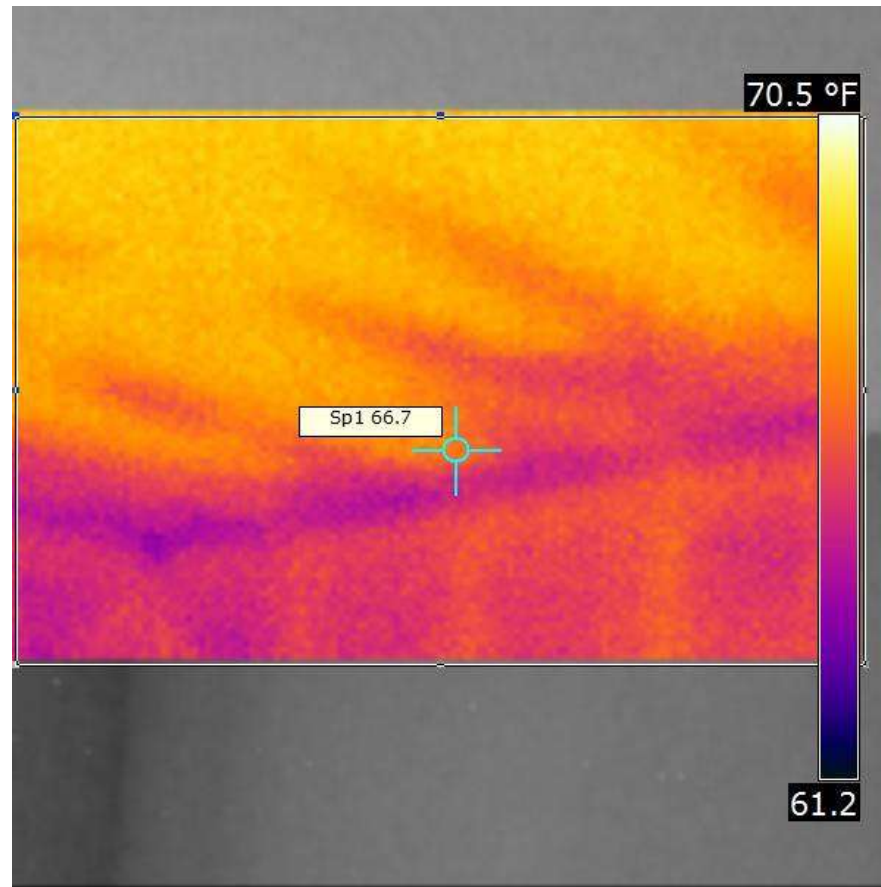


Blower Door



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Infrared Camera



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Duct Leakage Test



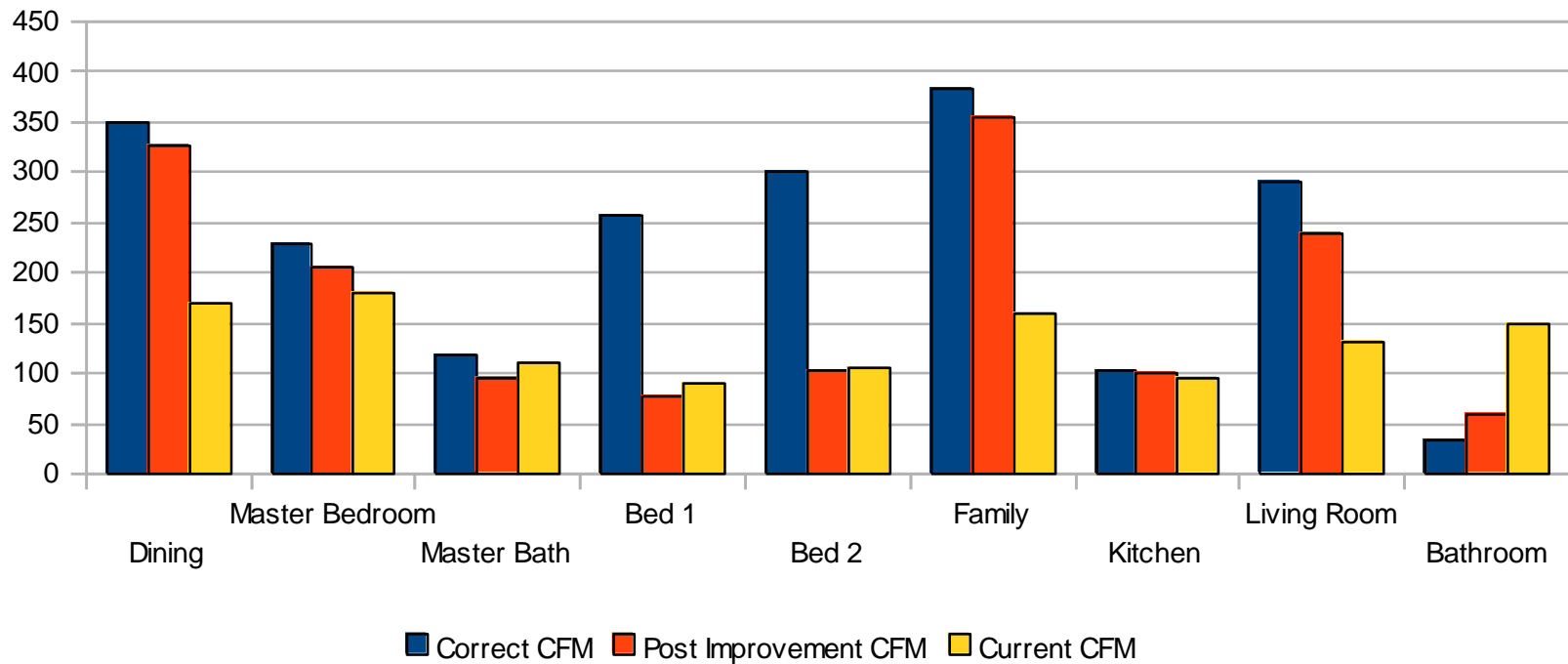
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Air Flow Measurements



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Air Flow Measurements



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Visual analysis of insulation levels and hazards



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Visual analysis of insulation levels and hazards



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Visual analysis of insulation levels and hazards



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Crawlspace Sealing



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